

Redfish

ISSUE #18, 2013.



CHOOSING FISH FROM YOUR LFS

TROPICAL



Barbs - an introduction!

MARINE



Snorkelling in subtropical Sydney!

CICHLIDS

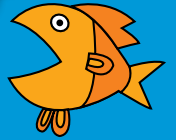


the Chocolate Cichlid!

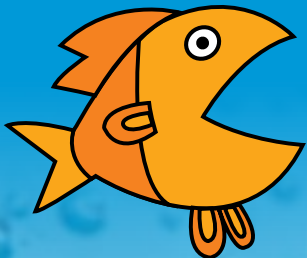
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General Advice Warning

The advice contained in this publication is general in nature and has been prepared without understanding your personal situation, experience, setup, livestock and/or environmental conditions.

This general advice is not a substitute for, or equivalent of, advice from a professional aquarist, aquarium retailer or veterinarian.

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About Redfish

Redfish is a free-to-read magazine
for fishkeeping enthusiasts.

At Redfish we believe in the free exchange of information to facilitate success by aquarium and pond hobbyists. Each month Redfish Magazine will bring you dedicated sections on tropical, coldwater, marine and ponds.

Redfish was founded in early 2011 by Jessica Drake,
Nicole Sawyer, Julian Corlet and David Midgley.

We hope you enjoy this, the 18th issue of Redfish.

古池や蛙飛込む水の音
ふるいけやかわずとびこむみずのおと

Aqua One Xpression Nano Aquarium



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The Xpression Nano Aquarium is the ideal starter aquarium with its compact size and stylish looks, it is the perfect addition to any home or office.

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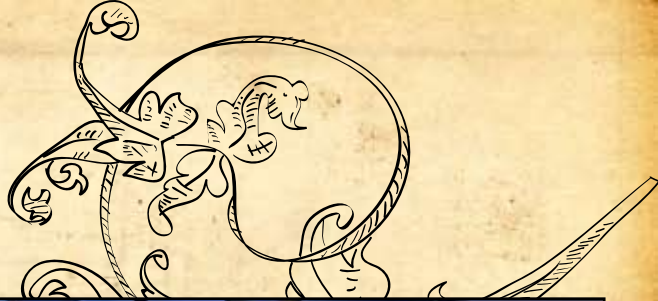
The temperature difference helps bring nutrients to plant roots where they are more readily adsorbed than through the leaves providing a long-term healthy environment for your plants and fish!

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Reader's Tanks



Photos by Shane Canellis

Reef tank:

by Shane Canellis

- * Set up in August 2011
- * Tank is 1200x600x600 with a total system volume of approximately 530 litres.
- * Sump size is 1100x450x450
- * Filtration:
40kg of live rock in the tank and a shallow 1-2 cm sandbed.
200micron filter sock
GAC in a TLF 150 reactor.
- * Skimmer: Vertex Alpha 200 with Vertex Vectra self cleaning head
- * Water movement: 2 x Ecotech Vortech MP40WES
Return pump is an Eheim compact 3000
Chiller pump is an Eheim compact 2000
- * Lighting: 3 x Ecotech Radion LEDs set to natural mode. Sunrise 9am, Sunset 10pm.
- * Water parameters:
Temp: 26-27 degrees
Salinity: 35ppt
Alk: 9.0dkh
Ca: 440ppm
Mg: 1300ppm
No3: 1 - 2.5ppm
Po4: 0.02
pH: 8.2
K: 407ppm
- * Additives: Vodka and vinegar is dosed via dosing pump for nutrient control.
Randy's recipe # 1 for maintaining the major 3 parameters.
Korallen Zucht Bio Mate twice a week.
Bio Digest Prodigio once a fortnight.
100% Reef Safe Amino Acids added daily.
Korallen Zucht Flatworm Stop dosed daily.
Potassium Chloride for maintaining K level.
- * Fish:
1 x Zebrasoma flavescens - Yellow Tang
1 x Ctenochaetus strigosus - Kole Tang
1 x Siganus corallinus - Coral Rabbitfish
1 x Salaria fasciatus - Lawnmower Blenny
1 x Labroides dimidiatus - Bluestreak Cleaner



Wrasse

1 x *P. hexataenia* - Six line wrasse
2 x *Amphiprion ocellaris* - Ocellaris Clownfish
1 x *H. melanurus* - Melanurus Wrasse
1 x *Macropharyngodon choati* - Choats Wrasse

* Coral:

Seriatopora hystrix, *Acropora* sp., *Millepora* sp., *Pocillopora* sp., *Montipora* sp., *Acanthastrea lordhowensis*, *Porites*, *Turbinaria* sp.

* Other inverts:

11 x *L. wurdemanni* - Peppermint Shrimp
4 x *Strombus* spp. - Stromb Snail
1 x *Trochus* sp. - Trochus Snail
?? x *Turbo* spp. - Turbo Snail
S. giganteus - Christmas tree worms

* Maintenance:

I clean the glass every second day.
Clean filter sock, skimmer cup daily.
Thorough check of all equipment daily.
Monthly vinegar clean of Vortech wet ends, skimmer pump. Weekly water change of 20% with natural salt water. All up I spend about an hour each day and 4 hours during the week-end testing and doing the water change.

I'm a bit pedantic with testing. I usually test for Alkalinity every second to third day ensuring stability. I find stability of Alkalinity to be most important with SPS. All other testing is done weekly, or more frequently if I suspect something is a little out.

by Shane Canellis

Planted Community Tank -- River of the World by Adil Chaouki

Photo by Adil Chaouki



Photos by Shane Canellis



Aquarium: 120x45x50cm Glass 12mm without reinforcements,

Lighting: DIY LED SMD 5050 100W - 9h/Day,

Filtration: external 1100L / Hr

CO2 injection reactor DIY external - 1bules/seconde,

Fertilization: Iron & Potassium

Sets: Branch Wood & cosmetic sand,

Plants: Hygrophilia stricta Hygrophilia polysperma, Java moss, fern Java Anubia Nana Anubia bar-

teri, Cryptocorine, Ludwigia glaudulosa, red lotus, cabomba,

Fish: P. ramirezi, Harlequin Rasbora, Cardinal Tetra, P.pulcher

Large species Mixed Freshwater by Sean Sop

This tank contains a 15 inch bala shark and pleco in the pic as well as 3 albino tiger os-cars, 2 regular tiger oscars, 2 Jack dempseys, 2 striped convicts, 2 kissing gouramis, 1 parrot fish and 1 silver dollar!

It is filtered by two external penguin 300 fil-ters, has 2 heaters with some air bubble walls for extra breathing support!



Photo by Sean Sop

Large species Mixed Marine by Stefan Bartanusz

The tank is about 490 us gal, it is 3 1/2 feet deep, 5feet long and whole frame of the tank height is 9ft, tank is about 5ft high.

The sump is in the basement under the tank.

As of now I have about 18 fish min size is 5 inch. The tank contains ~600 lb of live rock and 200 lb of sand. Tank is made out of 3/4 inch good quality plywood and also glass is 3/4 of an inch thick. It is all reinforced with glue, screws, fiber, and sweetwater epoxy. The whole tank is framed with 2/4s boards so it does not flex from pressure. The lights are 4x banks of LEDs.

The pump which circulates the whole tank is 2547g/h. Inside the tank I have about 18,000 g/h circulation. I run skimmers rated up to an 800 gal tank and use a UV sterilizer to keep the water clean. I do 4x150 gallon water changes a year. Also add clean RO water in every other day 5 gal. It is Very easy to take care of this tank.



Photos by Stefan Bartanusz

First Planted Aquarium by Donovan Leher

Donavan sent this photo without any information about the aquarium - but as they say, a picture is worth a 1000 words - and this a beautiful aquarium!!

If you have an aquarium you would like to see featured, email a photo and some information to our editor at: david@redfishmagazine.com.au



Photo by Donovan Leher

Beautiful Barbs



Strikingly Red, the Odessa Barb is a beautiful fish. Photo by Budi Lukman.

Introduction

The barbs include a diverse array of suitable fishes for the aquarium. There's a lot of bad press regarding barbs, and one fish – the fin-nipping tiger barb – has generated most of it. It is certainly true that the tiger barb is nippy and can shred the fins of slow moving fishes such as gourami, guppies, mollies and angelfish. There are, however, many other barbs that make ideal and peaceful aquarium residents.

Nevertheless, it is worth remembering that barbs are active fish and this activity can be distressing for some slow moving species (such as Bettas) and can also effect feeding via competition. This aside, hardy, beautiful and active barbs make long lasting and interesting display fishes. With the huge variety of species available there's likely to be something in the group to suit your aquarium.



Most, but not all barbs, are included in the genus *Puntius*. The genus hails from Asia with species being found throughout Southern Asia, India and Sri Lanka.

Taxonomy

The barbs are an artificial assemblage of fishes within the family Cyprinidae. The name 'Barb' is derived from the genus in which many aquarium barbs were originally placed: *Barbus*. Recent taxonomic revisions have variously moved many *Barbus* species into (and back out of) other genera including *Barbodes*, *Capoeta* and *Puntius*.

Today the taxonomy of the group is far from settled and in this article I've used the taxonomic system used by fishbase.org. This system places most Asian aquarium barbs in the genus *Puntius*. The genus *Puntius* contains some 120 species many of which are ideal aquarium residents.



the subfamily that contains most barbs is sister to the well known Danios. African Barbs, such as *Barbus fasciolatus*, are sometimes treated as a separate subfamily (Labeoninae), although this taxonomy is not universally accepted.



Sri Lanka's Horton Plains National Park is home to an array of barbs including the Two Spot Barb, Black ruby Barb, Cherry Barb and Black-lined Barb.

Distribution

The vast majority of barbs occur in Southern Asia, India and Sri Lanka. Some species do occur in southern Europe and Africa, though the group is absent from the Americas and Australia. In their natural habitat Asian barbs generally dominate the "small fishes" niche, much as tetras and dwarf cichlids do in South America. This article focuses on Asian barbs, though several infrequently available African barbs, notably *Barbus fasciolatus* and *Barbus callipterus*, are also worth keeping if you can obtain stock.

Barbs occupy a range of niches throughout Asia: occurring in lakes, rivers and streams along with man-made ecosystems such as rice paddies. There are barbs that live in rapids, such as the Asoka Barb (*Puntius asoka*), while most species prefer slower moving water. These slow-water environments are typically closer to stream edges and in backwaters and eddies.



The iconic Tiger Barb occurs through the Malay Peninsula, Sumatra and Borneo. It has a reputation for being nippy, and while they can be - keeping the species in a large group (> 6 individuals) helps minimise the impact of this behaviour. Better still, a large school of Tiger Barbs look great and make big impact in the display freshwater aquarium.



Lemon fin barbs are sometimes available in the aquarium hobby. This species, formerly known by hobbyists as *Barbus daruphani* is more correctly *Hypsibarbus wetmorei*. It's a larger growing species that can reach lengths of 25cm. The species occurs in MaeKlong, Mekong and Chao Phraya basins. Photo by Mike Atkins.

Destruction of Peat Swamp Forests in Asia threatens the environment of many *Puntius* species. Mostly, these forests are being cleared for the planting of commercial oil palm (*Elaeis guineensis*) production.

PHOTOS:

Borneo peat swamp forests seen burning from a satellite. Photo by NASA.

Puntius hexazona by Budi Lukman.



Feeding and ecology

Most barbs are omnivores and as such eat both plant and animal material. In the aquarium at least they leave most plants alone though some species have a tendency to chew on the edges of soft-leaved plants. In the wild most barbs are opportunistic and feed on insect larvae, small annelid worms, eggs and fry of other fish when available. When animal foods are not available most species will consume more plant material and even algae.

Small barbs are frequently consumed by larger barbs – some of which reach more than 50 cm! -- along with other Asian predators such as catfishes (notably bagrids and clariids), snake-heads (*Channa* spp.), knifefishes (*Notopterus* spp.), nandids, arrowanas (*Scleropages formosus*) and various sleeper gobies (family Eleotridae).

Keeping

Prior to saying anything else about keeping barbs there's one important rule that is worth keeping in mind. All barbs are schooling fish. This necessitates that you keep at least six individuals (10-12 would be better) of each species in an aquarium. If you can't house this number, I'd advise you to move on to non-schooling fishes. Thankfully, barbs come in an assortment of sizes so keeping a small group is manageable in most aquariums. I've provided some better (and worse) selections in the tables at the end of this article.

Aquarium size is also important. I consider 40-80 litres to be a minimum aquarium volume for tropical fish. For the small barbs (Table 1) this size aquarium would be adequate for 6-14 individuals and some associated clean-up fish. For larger barbs (Table 2), 120-200 litres should be considered a minimum. Schools of Spanner or T-bar Barbs, at almost 18 cm, would require a larger aquarium. For the well-being of the fish, and for aesthetic reasons, it's generally better to have one large group of one species, than three smaller groups of different species. In aquascaping, like gardening and interior design, repetition equals impact!

Most barbs require neutral, to slightly acidic, water which while not soft, isn't hard either.



Chitala blanci (Royal Knifefish) co-occurs in Asia with barb species on which it feeds. Photo Peter Potrowl.



Insect larvae, including mosquito larvae, and small worms are relished by most small *Puntius* species. Photo by James Gathany, CDC.



One of the smallest barb species, the Cherry Barb (this is a male) only grows to a few centimetres. Its small size is not its only attribute that is desirable. Indeed, it is brightly coloured and arguably the most placid species in the *Puntius* genus. Photo by Brian Gratwicke.



The barb aquarium is awash with colour and movement!

Table 1: Barbs for the beginner

COMMON NAME	SCIENTIFIC NAME	SIZE	ORIGIN	COMMENTS
Cherry barb	<i>Puntius titteya</i>	5	Sri Lanka	Cherry barbs are perhaps the perfect choice for beginners. Peaceful, beautiful and readily available. Females and males are easily distinguished by their colour.
Checker barb	<i>Puntius oligolepis</i>	5	Sumatra, Indonesia	Checker barbs are less brightly coloured than most other barbs, but a large group of these beautiful fish still make an impact!
Greenstripe barb	<i>Puntius vittatus</i>	5	India, Pakistan and Sri Lanka	Like the checker barb, the greenstripe barb is a subtly coloured fish, again the best use is in a large group.
Two-spot barb	<i>Puntius cumingii</i>	6	Sri Lanka	Two black spots on a bronze-green body make the two-spot barb a very attractive addition to the community aquarium.
Black ruby barb	<i>Puntius nigrofasciatus</i>	6	Sri Lanka	Probably the most beautiful of the smaller barb, black ruby barbs are a stunning fish!
Five-banded barb	<i>Puntius pentazona</i>	6	India	Not to be confused with the superficially similar tiger barb, the five-banded barb is a peaceful, almost shy species that benefits from dense planting in the aquarium. Ideal for aquarists wanting tiger barb looks without tiger barb problems.
Melon barb	<i>Puntius fasciatus</i>	6	India, Burma, Indonesia	Looking a little like juvenile spanner barbs, melon barbs are a beautifully striped species for the aquarium.
Gold barb	<i>Puntius semifasciolatus</i>	7	China	Gold barbs are readily available in almost every retail aquarium Australia-wide. Their striking colour develops further as they age.
Two-spot barb, Red-side barb	<i>Puntius bimaculatus</i>	7	India and Sri Lanka	While this species shares a common name with <i>P. cumingii</i> , this species looks very different -- it's not as deep bodied and is more elongated. The two black spots are on the caudal peduncle and dorsal fin.



There's a subtle beauty to the Checker Barb (*Puntius oligolepis*). Dismissed by many an aquarist as just another grey fish the species is peaceful, interestingly patterned and a delight to sit and watch.
Photo by Budi Lukman.

Table 2: Larger Barbs

COMMON NAME	SCIENTIFIC NAME	SIZE	ORIGIN	COMMENTS
Striped barb	<i>Puntius johorensis</i>	10	Burma, Indonesia, Malaysia and Thailand	The striped barb is probably my favourite barb species that's readily available in Australia. Numerous black stripes run horizontally along the length of the fish. In a group of 10-15 individuals this is an amazing addition to the planted aquarium. Sometimes listed as <i>P. lineatus</i> .
Arulius barb	<i>Puntius arulius</i>	12	India	Arulius barbs are the ugly ducklings of the aquarium trade. Rarely do such unimpressive juveniles grow into such magnificent adults. With their elongated filaments on the dorsal fin a group of arulius can make a great visual impact!
Rosy barb	<i>Puntius conchoni</i>	14	Afghanistan, Bangladesh, Burma, India, Nepal, Pakistan	Rosy barbs are a subtropical species and can tolerate temperatures down to 18° C. They are a large barb (reaching 14 cm), though most aquarium individuals only reach 7-8 cm. Avoid the unusual colour morphs of this species as they are less hardy than the "wild" colouration.
Clown barb	<i>Puntius everetti</i>	14	Borneo, Sumatra	This species has a superficial, yet unmistakable similarity to the clown loach. It's a large growing species, which like all barbs is best in groups.
Red line torpedo barb, Denison barb	<i>Puntius denisonii</i>	15	India	Above all other barbs discussed in this article, the red line torpedo barb is probably the most fashionable barb at present. With its elongate shape and bright red stripes it looks more a rasbora or scissortail than a barb.
Spanner barb, T-barb	<i>Puntius lateristriga</i>	18	Burma, Indonesia, Malaysia and Thailand	Spanner barbs are stout-bodied, large growing barbs that are ideal with mid-sized unaggressive cichlids such as <i>Heros severus</i> . They have an interesting T pattern on their flanks which gives rise to their common name: t-barb.



Where the Checker Barb is a classic MG, the Red Line Torpedo Barb is the Lamborghini of the genus *Puntius*. Adapted for fast-flowing water the species has a sleek, elongate body complete with racing stripes. Photo by Budi Lukman.

Table 3: Barbs for more experienced hobbyists

COMMON NAME	SCIENTIFIC NAME	SIZE	ORIGIN	COMMENTS
Tiger barb	<i>Puntius tetrazona</i>	7	Borneo, Sumatra	Beautiful and feisty, tiger barbs are responsible for the majority of bad press given to barbs. Can nip fins. Keep in groups of 12-20 individuals in aquaria large enough to house such a group. Avoid including any slow-moving species or species with long fins with tiger barbs. Several varieties (green mossy, albino etc) are available, though most are, in the author's opinion, not an improvement on the beauty of the wild form.
Orange buffalo barb	<i>Puntius rhomboocellatus</i>	6	Borneo	<i>Puntius rhomboocellatus</i> is a beautiful species of barb that unfortunately can be challenging to keep. The species requires soft, acidic water and is best kept in densely planted aquariums. As such the species can be housed with South American dwarf cichlids and hardier tetras.
Asoka barb	<i>Puntius asoka</i>	17	Sri Lanka	This species of barb is endangered in the wild so only captive bred individuals should be purchased. The asoka barb is an attractively spotted shark-like fish that requires fast water movement in the aquarium. Best kept with other rheophilic species such as lionhead cichlids, loaches and suckermouthed catfishes.
Tinfoil barb	<i>Barbonymus schwanenfeldii</i>	30	Burma, Indonesia, Malaysia and Thailand	Small tinfoil barbs are sometimes available to hobbyists. This attractive fish grows much too large for most aquarists reaching over 30 cm in length. Despite its size it's a peaceful, though sensitive species. The requirement for the species to be kept in group further complicates the space requirements of the species.



The beautiful Orange Buffalo Barb is a relative newcomer to the hobby, but it can be somewhat tricky to care for successfully in the longterm. Avoid it if you're new to this group of fish.

Photo by Budi Lukman.

Thankfully in Australia, most municipal water supplies are ideal for this hardy group of fishes and do not require modification other than the removal of chlorine and chloramine using a good quality water aerator. Most species come from relatively slow-moving water and this should be reflected in the choice of water current provided in the aquarium. In aquariums with powerful filters, water current can be slowed via the use of dissipating add-ons such as spray bars that reduce unidirectional current. For the most part Asian barbs are tropical fishes and will do well in water temperatures of 22-28° C, though some species, such as the rosy barb, will tolerate lower temperatures.

As for all tropical fishes, the aquarium setup should mimic the natural habitat. Such replication can be easily achieved using Asian aquatic plants such as crypts (*Cryptocornea* spp.) and Java fern (*Microsorium pteropus*). I've also seen Asian-style aquariums with 4cm diam. bamboo canes included in the background that look very effective (despite the actual absence of any aquatic species of bamboo). There are numerous species that are well suited to co-habit with barbs including larger tetras, West African dwarf cichlids, Corydoras catfish and the like. If you're looking to maintain an Asian theme – why not consider other Asian fishes such as rasboras and loaches. To avoid using American sucker-mouthed catfishes for algae clean-up, both the sucking loach -- *Gyrinocheilus aymonieri* -- (also called the Chinese algae eater) and the Siamese algae eater (*Crossocheilus siamensis*) are useful additions to the aquarium. The former should be added alone, while the latter in a small school.

Barbs are, for the most part, unfussy feeders that will consume most offerings provided by the aquarist. Be sure to provide your barbs with a variety of high quality food items. Prepared diets are suitable; though only buy small amounts, as fish food tends to lose vitamins and quality after lengthy storage. Similarly, frozen and parasite-free live foods are also acceptable. When provided with clean water, high quality foods and a



Provided suitable quarters to accommodate for their larger size, Spanner Barbs do well in aquariums and are placid residents best kept with larger fish.



Sawbwa barb (*Sawbwa resplendens*) is an unusual and rare barb, endemic to Inle Lake in Burma. Photo by: The Man On The Street at en.wikipedia



A large group of Tinfoil Barbs (*Barbonymus schwanenfeldii*) in a European aquarium. Photo by Eva (waterlily78 @ flickr)

stress-free existence, breeding is generally less difficult.

Breeding

Like many other cyprinids, barbs are egg scattering fishes that show no brood care and will actively eat their own eggs, after spawning, given the opportunity. Breeding barbs therefore necessitates a dedicated breeding aquarium. The requirements for each species are broadly similar, though the details of age of maturity, spawning cues and the like differ.

For a hypothetical, generic barb the ideal breeding aquarium therefore should be setup as follows: The breeding aquarium should contain well-cycled, aged water that is identical to that in the display aquarium in which the barbs are normally housed. It should include a base which allows eggs to be safe from their parents. Such a base can be achieved using large marbles (which exclude the adults) or a spawning grid suspended from the base of the aquarium. It should also include dense Java moss (*Taxiphyllum barbieri* syn. *Versicularia dubyana*) that assists the spawning pair to feel comfortable and further provides some protection to the eggs. A sponge filter, powered by an air pump, should provide the filtration for the breeding setup.

Choose a courting pair of barbs from the display aquarium and transfer them to the breeding aquarium. For some species it can be advantageous to separate the females for a few days prior to the males to allow them to "plump up" with eggs. Depending on the species the pair should be left in the breeding aquarium until spawning is completed (usually this is for 0.5 to 3 days). The eggs of most barbs species are relatively large and the fry will be able to feed on either newly hatched brine shrimp, microworms or powdered flake foods soon after hatching. Hatching for most species takes between two and five days. Within 12-16 weeks the fry of most species resemble the adults.

Close

The barbs are a diverse and interesting group of fishes. Kept in community, species-only, or Asian biotype aquariums they can be a stunning addition to the home aquarium. Finally remember to keep all barbs in groups of six or more and you'll be rewarded with hardy, spectacular fish! 🌸



With colours like these, it's little wonder barbs are aquarium favourites!



Puntius bimaculatus (Red-side or Two-spot barb).
Photo by Anandara J Kumar

The Chocolate Cichlid

Introduction:

The chocolate cichlid is another of South Americas underrated species. This is a large cichlid (20-30cm) which is quite gentle natured, despite its size. This, however, should not suggest that they should be housed with small fishes such as neon tetras - which they will readily consume.

The tank should be well planted with tough indigestible species, such as java fern and anubias. If possible, plants should be placed such that the tank can only be viewed from one side, this helps to reduce the stress the cichlid feels at being “exposed” to predators. In addition the tank should be furnished with wood, dark substrate and floating plants. The dark substrate and floating plant cover help further to calm this nervous cichlid.

There are some reports that this fish will leap out of the water to catch flying insects - as such tight fitting (and adequately thick) tank lids are required.

The species is reasonably sensitive to dissolved metal ions (from pipes) and as such peat filtration may be helpful in chelating some of these free ions. The species is known to fall ill to a variety of “pitting” diseases when metal ion concentrations are too high.

Species:

Hypselecara temporalis
(Gunther, 1862)

Synoma:

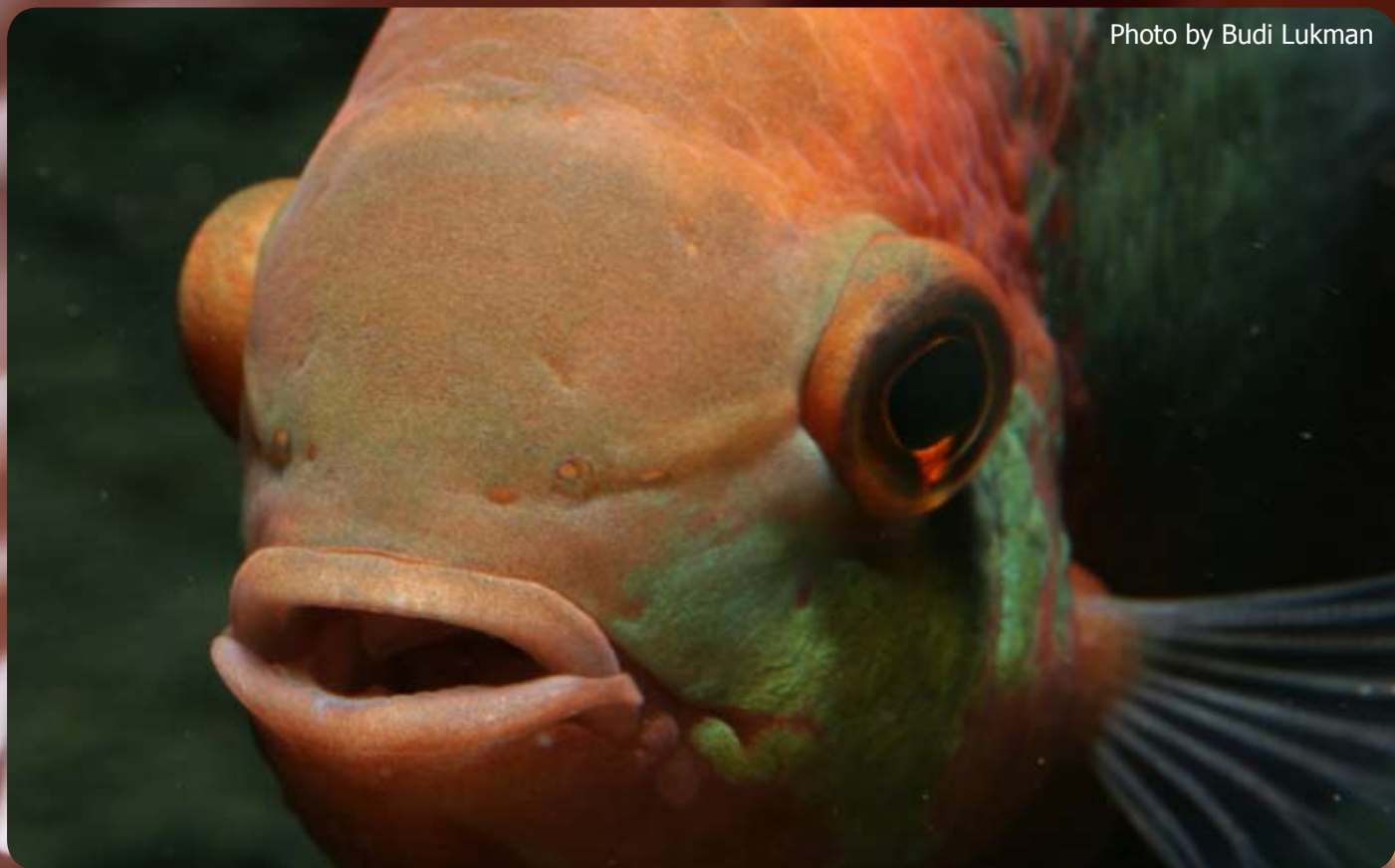
Acara crassa, *Heros goeldii*, *H. crassa*, *Cichlasoma hellabrunni*, *Cichlasoma temporalis*

Origin:

South America, wide-spread, Amazon river drainages. Some variation does exist in populations along the length of the Amazon.



Photo by Budi Lukman



Natural habitat:

Stagnant, generally in white water 0.5 - 2.0m deep. The species has, however, also been found in black and clear water habitats. In almost all cases the species is found under floating plant cover in dim light.

Water chemistry in the wild:

pH 6.0 - 7.2; gH - < 1 degree; kH - < 1 degree; conductivity 127 microsemens (@26 °C)

Husbandry:

H. temporalis is a relatively peaceful cichlid and will tolerate other peaceful species. Other Chocolates should be removed once a pair forms. The species is an unfussy feeder, but some vegetable content should be included. Breeding is straightforward

once a pair has formed. They are typical open spawning cichlids. Pairs may eat their clutch if uncomfortable so ensure they have adequate cover. Fry should be removed once they are free-swimming and feeding well on crushed flake/pellet foods. Chocolate cichlids are a joy to keep -- they may not be the brightest coloured species - but they are fascinating nevertheless. 🌸



In the wild, Chocolate cichlids are found in vegetation-covered waters that are slow-moving. The use of floating plants (where the law permits) in aquariums is useful in recreating the habitat of this majestic species.

the art of fish shopping

a redfish guide for the new aquarist



So you've headed to the shops, you have got that community tank back at home; it clearly needs some new inhabitants. But what to put in and how do you choose good stock once you've decided what to add?

Speak to most experienced hobbyists, those people really, really into their fish, and they'll tell you that you should know the fish you want before you walk into the store – and you shouldn't make any impulse purchases. I think this is probably over the top, and if you're shopping with a trusted retailer (and I advise you to seek one out!) the staff at stores can frequently help with your purchase – even when you know relatively little about your purchase. Here's a quick guide to choosing fish and a local fish store that hopefully will help to avoid purchasing fish in poor condition or those species that are unsuited to your setup or level of experience.

Choosing a store

When I look for a local aquarium, somewhat perversely I'm encouraged by what isn't for sale or on display. Every store and every aquarist has purchased fish that aren't in the best health. In good aquariums, these fish aren't for sale. Sometimes there's a note on the aquarium declaring "not for sale", sometimes staff will steer you away from a purchase explaining that those fish are recovering or being treated. This is great sign that you're going to have positive experiences.



Fish with obvious signs of disease, like this cichlid with White Spot (caused by the protozoan *Ichthyophthirius multifiliis*), should be avoided. Some species eg. Clown Loaches and Tangs are particularly prone to this and similar infections. A good local fish store can assist you in avoiding these parasites!



This Betta has a severe Velvet infection. Looking for signs of disease not only helps you avoid a bad purchase, but protects the fish at home in your existing setup from the introduction of parasites.

“somewhat perversely I’m often encouraged by what isn’t for sale or on display” -- good aquarium staff will tell you what not to buy!

Take your time in the aquarium, look around at the stock for sale, introduce yourself and your interests, discuss your situation, expertise and current aquarium residents with the staff. Again, being steered away from a purchase that’s not a good match for you and your aquarium is a positive sign that you’re dealing with a good aquarium store. Of course, the fundamentals: clean premises, memberships to relevant ethical societies, no dead fish on display, tanks not overcrowded all apply – but take these last points with a grain of salt. I’ve seen perfect-looking, spotless aquariums from which I wouldn’t purchase and I’ve seen the reverse. It can’t be stressed enough that a good retailer is worth their weight in gold. They’re keen to see you succeed in the long term, not just for some purchase today – it’s in their interest!

Choosing fish

While I said above that the hobbyist mantra to research your fish prior to purchase can be a bit over the top, it’s also universally a good idea. Thankfully, the internet means you’ve the collective wisdom of thousands of aquarists at your beck and call, and if you’re armed with a smart phone it certainly doesn’t hurt to have a quick look at the maximum size and

husbandry notes for that fish that you just have to buy. If you're in the store I described above, choosing fish is remarkably easy. Ask the staff for good choices and you'll be guided to healthy, active and suitable residents for your aquarium. Sadly, not everyone has that local fish store – so if you're feeling a bit alone in your decision making, here's what I look for prior to purchase: Look for fish with a full but not bloated belly. Don't just look at the one individual you're interested in, have a look over the whole tank. Are all the fish behaving normally? Are there any signs of sick fish or odd behaviour? Avoid fish with even minor injuries – these often recover, but they are best left with experts. Disease often manifests itself subtly – look for small spots on the fishes flanks, redness about the gills or lesions anywhere on the body. These are signs of poor fish health and such individuals shouldn't be added to your display aquarium.

Success with your aquarium starts with good stock. Find yourself a good store – with good stock and you'll have a good experience. ♣



Two of the poster children for bad purchases. The Redtail Catfish and the Oscar -- both are fine in the care of experienced hobbyists, but make very poor additions to the community aquarium!

Photo (top): Elma (úlfhams víkingur)

Photo (bottom): Daniella Vereeken



Which Goldfish do you choose? Pick an active individual, that's brightly coloured without any signs of disease. The fancier varieties tend not to be as hardy (though this isn't always true).

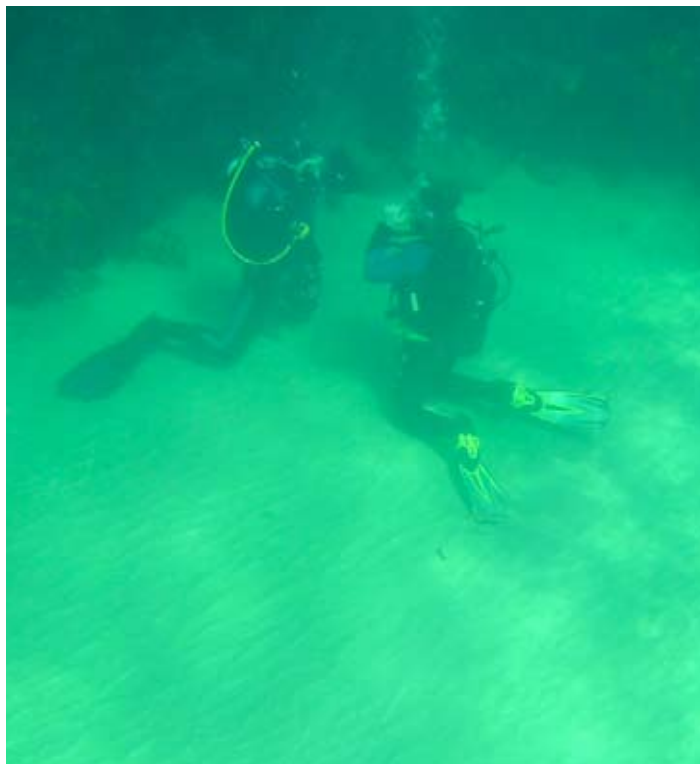
CLOVELLY BAY SNORKELLING

BY JESSICA DRAKE



When you think of great places to snorkel, where you might be able to swim with a multitude of brightly coloured fish, you'd probably immediately think of tropical waters. The temperate marine environment found in the waters of Sydney, Australia may not quite rival the colour and diversity of the Great Barrier Reef, but there is more to be found here than you might think. Clovelly Bay, in the Eastern suburbs of Sydney, is a remarkable place to snorkel.

It is a long narrow bay which has a rock wall at the ocean end of the bay. Although the rock wall does not protrude above the surface it does provide a barrier which dissipates the ocean waves and forms a large calm pool which is essentially as close as you'll get to a "natural aquarium". This area is at the



SCUBA divers at Clovelly Bay.
Photo by Mados
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Clovelly Bay, in temperate Sydney's eastern suburbs, is a popular spot for beach goers and snorkellers. This is due to its narrow but deep channel with a rock wall blocking the more extreme ocean currents.

very southern end of the distribution for many tropical species of fish and also at the northern end of distribution for many southern temperate species, so a very diverse range can be seen.

The fish in the bay are well used to a constant stream of swimmers and snorkellers and as a result most are very tame. Highlights of a tour of the bay include:

The Eastern Blue Groper (*Achoerodus viridis*) for which the bay is famed. Despite the common name, these fish are actually a large species of wrasse. All juveniles are olive coloured females, with the largest, most dominant fish in a given territory becoming a spectacular blue male. They can reach a length of 1.2 metres and may weigh as much as 22kg. They are generally bold fish which are quite happy to be hand fed by hu-



Curious and sociable the Blue Groper often swims close to divers and snorkellers and will feed from the hand. These large wrasses are often accompanied by a host of smaller fish feeding on leftovers!

Photo by lennyk410.

www.flickr.com/photos/57527070@N06/



The beautiful Blue Groper (*Achoerodus viridis*) is a popular resident of Clovelly Bay.



Blue gropers are protogynous hermaphrodites. All juveniles are female and are differently coloured to the adults. Despite the name, Blue Gropers aren't gropers, they are a large species of wrasse, the Eastern blue gropers grows to 1.2 m (3.9') in length and weights of 22 kg (49 lb).



Blue Gropers leave a trail of eaten Black Sea Urchins (*Centrostephanus rodgersii*) in their wake.

Photo by Mados

www.flickr.com/people/mados/

mans. In the following pages you'll see photos of both the current large dominant male of Clovelly Bay and also a large subdominant female. She still has an olive coloured body but is already starting to display tinges of blue on her head. Should anything happen to the dominant male she will quickly change sex and colour and become a blue male herself.

There are many smaller wrasse species to be found in the bay. These include the Redspot Wrasse (*Stethojulis bandanensis*), a tropical species which just manages to extend its distribution to Sydney and the Senator Wrasse (*Pictilabrus laticlavius*) which although colourful, is actually a temperate species. The Pearly Wrasse (*Halichoeres margaritaceus*) has bright green spangled scales which sparkle in the sunlight.



Snorkelling Clovelly Bay, Sydney, Australia.

Large schools of placid Luderick (*Girella tricuspidata*) are happy to graze on the rocks and will rarely scatter as people swim by. Other vegetarians found in large numbers on the rocks are the Sea Hares (of the *Aplysidae* family - in Sydney, several *Dolabella* species are found), which are a type of sea slug. With careful observation amongst the crevices in the rocks, you may find smaller species of colourful nudibranchs as well as a shy octopus or two.

Small groups of Flutemouths (*Fistularia commersonii*), which are relatives of the pipefishes and seahorses, are frequently found in the bay along with the regular shoals of Silver Bream, various Trevally species, Hula fish and Mados but to name a few. Stingrays are generally easy to find in the deeper part of the bay.

The Pygmy Leatherjacket, at only 9cm in length for an adult, is one of the smallest leatherjacket species and as such is difficult to find, but is well worth looking for. It has a disc shaped body and camouflages itself amongst the seaweed. It is only found in Australia.



Large submerged rocks at Clovelly Bay with a host of larger fish species



An olive coloured female Blue Groper.



Sydney is in the southern end of the range of the very pretty Redspot Wrasse (*Stethojulis bandanensis*).

This species is kept in aquariums, but can be difficult to maintain in the long term. It should probably be left to experts with Wrasse or in the ocean!

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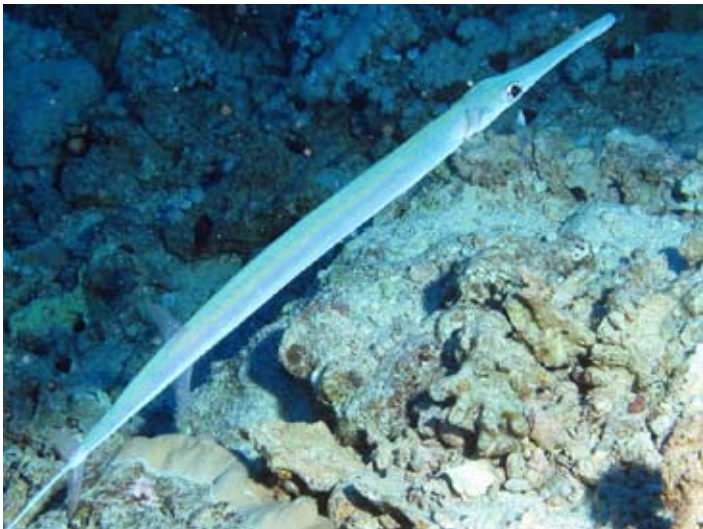
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a group of juvenile Luderick (*Girella tricuspidata*)



Luderick (*Girella tricuspidata*) grazing on seaweeds.



Flutemouths (*Fistularia commersonii*) are relatives of pipefish and seahorses. Photo by Derek Keats



Various Trevally species (*Carangoides*) are frequently seen in schools in Clovelly Bay.



Much maligned by fishermen the Toadfish (*Tetraodon glaber*) is a pretty species of pufferfish.



Sergeant Majors (*Abudefduf* sp.) are common at Clovelly Bay. Members of the Damselfish family they adapt well to captivity but are territorial.



a male Pearly Wrasse, *Halichoeres margaritaceus*. This small growing wrasse (to ~13cm) has a tropical distribution and most commonly found in northern parts of NSW. Temperate Sydney is most definitely at the southern end of its distribution. It's sometimes kept in aquariums.



Senator Wrasse (*Pictilabrus laticlavius*) are another colourful, and larger (to ~30cm) wrasse from Clovelly.



Silver Bream (*Acanthopagrus australis*) are a common sight at Clovelly and a favourite with anglers.

Sydney itself is a picturesque city with many wonderful sights and as such is a popular tourist destination. Whether you happen to live here, or if you're just visiting, a trip to see the underwater marvels of Clovelly Bay's "natural aquarium" is highly recommended for any fish enthusiast. ♣



photo by Khantipol

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<http://www.advancedaquarist.com>

Britain

Anglia Reef Club

<http://www.angliareefclub.org.uk/>

Bracknell Aquarist Society

<http://bracknellaquarist.wordpress.com/>

Bristol Aquarists Society

<http://www.bristol-aquarists.org.uk/>

Bristol Tropical Fish Club

<http://www.bristoltropicalfishclub.org.uk/>

British Cichlid Association

<http://www.britishcichlid.org.uk/>

British Killifish Association

<http://www.bka.org.uk/>

British Koi Keeper's Society (BKKS)

<http://www.bkks.co.uk/>

See website for UK sections

Catfish Study Group

<http://www.catfishstudygroup.org/>

Dunstable & District Aquarist Society

<http://www.ddas.co.uk/>

Federation of Northern Aquarium Societies (FNAS)

See website for list of associated clubs

<http://www.fnas.org.uk/>

Greater Manchester Cichlid Society

<http://www.nekrosoft.co.uk/gmcs/>

Hounslow & District Aquarists Society

<http://myweb.tiscali.co.uk/hounslowfish/>

Ilford & District Aquarists & Pondkeepers Society

<http://www.ilfordaquarists.co.uk/>

Preston and District Aquatic Society

<http://www.northtrop.co.uk/preston.html>

Reigate and Redhill Aquarist Society

<http://www.networkclub.co.uk/rras/>

Ryedale Aquarist Society

<http://www.ryedaleaquaristsociety.co.uk/>

Southend Leigh and District Aquarist Society

<http://www.southendaquarist.co.uk/>

Strood and District Aquarist Society

<http://www.stroodaquarist.co.uk/>

Scotland

Federation of Scottish Aquarist Societies.

See website for list of associated clubs

Aberdeen Fish Keeper's Club

http://www.scottishaquarist.co.uk/scottish_aquarium_society.htm

<http://sites.google.com/site/aberdeenfishkeepersclub/>

Greenock & District Aquarist Society

http://www.scottishaquarist.co.uk/greenock&district_as.htm

Fair City Aquarist Society

<http://www.faircityaquaristsociety.co.uk/>

Union of Scottish Aquarists

<http://www.fishwebusa.co.uk/>

Capital Aquarist Society, Edinburgh

http://www.scottishaquarist.co.uk/capital_aquarists_society.htm

Dundee & District Aquarist Society

http://www.scottishaquarist.co.uk/dundee&district_aquarist_society.htm

Glenrothes Aquarist Society

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Lanarkshire Aquarist Society

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Musselburgh & District Aquarist Society

http://www.scottishaquarist.co.uk/musselburgh_a_s.htm

Perth Aquarist Society

http://www.scottishaquarist.co.uk/perth_aquarist_society.htm

Poecilia Aquarist Society

http://www.scottishaquarist.co.uk/poecilia_scotia.htm

Workington & District Aquarist Society

http://www.scottishaquarist.co.uk/workington_as.htm

Wales

Newport & District Aquarist Society

<http://kimnp19.tripod.com/>

Ireland

Irish Midlands Aquatic Society

<http://midlandsaquatic.weebly.com/index.html>

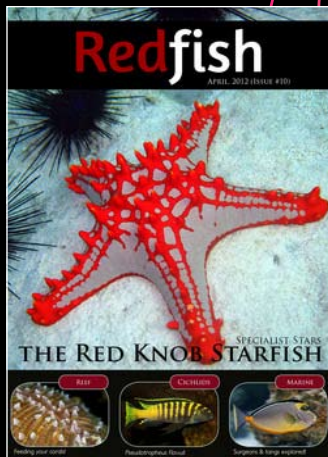


Photo by Hobvias Sudoneighm

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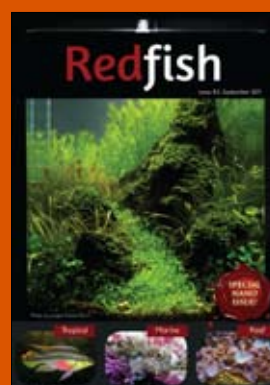
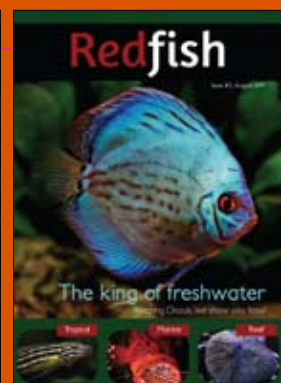
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